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## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
 United States Patent and Trademark  
 Office  
 Box PCT  
 Washington, D.C.20231  
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year)  
 13 October 2000 (13.10.00)

International application No.  
 PCT/SE00/00435

Applicant's or agent's file reference  
 Lau PCT-2847

International filing date (day/month/year)  
 06 March 2000 (06.03.00)

Priority date (day/month/year)  
 09 March 1999 (09.03.99)

## Applicant

BLOMQVIST, Tomas et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

25 August 2000 (25.08.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Claudio Borton

Telephone No.: (41-22) 338.83.38

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 19 JUL 2001

WIPO

PCT

14

Applicant's or agent's file reference Lau PCT-2847	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE00/00435	International filing date (day month year) 06.03.2000	Priority date (day month year) 09.03.1999
International Patent Classification (IPC) or national classification and IPC7 A61G 10/02 // A61G 13/00, A61G 15/10, A61B 19/00		
Applicant Biometron AB et al		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 25.08.2000	Date of completion of this report 27.06.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Ingrid Falk/LS Telephone No. 08-782 25 00

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00435

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement) under article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

International application No.

PCT/SE00/00435

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	<u>1, 2, 4, 8</u>	YES
	Claims	<u>3, 5, 7, 9-12</u>	NO
Inventive step (IS)	Claims	<u></u>	YES
	Claims	<u>1-12</u>	NO
Industrial applicability (IA)	Claims	<u>1-12</u>	YES
	Claims	<u></u>	NO

## 2. Citations and explanations (Rule 70.7)

The claims relate to a placing unit for a human being, which can include an operating unit, a dentist's chair, a bed or a worktable.

The claimed invention is intended to solve the problem of human health risks caused by chemical products that are used in the presence of a placing unit for a human being.

According to the solution, the invention is a unit characterised in a device that subjects the unit to a jet air directed at a certain part, at several parts, or at the entire unit itself, whereby the air that passes the unit is admitted to a purification part.

In the International Search Report the following documents were cited:

(D1) US 4422369 A, cf. figures 1 and 4

(D2) DE 3644417 A1, cf. figures 1 and 2 and abstract

Documents (D1) and (D2) disclose placing units for a human being that include a device that subject the units to a jet of air. The jet air that passes the units is admitted to a purification part. (D2) shows a hospital bed. Purified air is blown from the head end of the bed into the patient's breathing area. The air is then admitted to a purification part via a suction hose. The purified air is passed into the room or is circulated back to the system via a tube under the bedcover.

...../.....

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/SE00/00435

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V.

Hence, the invention according to claims 1,2,4 and 8 is known from the above cited documents.

It appears obvious to a person skilled in the art to arrange the placing unit in the variations described in claims 3, 5-7 and 9-12.

What is claimed in the claims is considered to be industrially applicable.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 00/00435

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A61G 10/02 // A61G 13/00, A61G 15/10, A61B 19/00  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A61G, A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4422369 A (SMETS), 27 December 1983 (27.12.83), column 5, line 14 - line 22, figures 1,4	1-8,10,12
Y	--	9,11
X	DE 3644417 A1 (HÖLTER, HEINZ), 14 July 1988 (14.07.88), figures 1,2, abstract	1,2,4,5,8
Y	--	3,6,7,9, 10-12
Y	US 4252054 A (BAKELS), 24 February 1981 (24.02.81), figure 2, abstract	9,11
	--	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

16 June 2000

Date of mailing of the international search report

2000 -07- 2 5

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
Facsimile No. +46 8-666 02 86

Authorized officer

Ingrid Falk / JA A  
Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00435

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 3203674 A1 (MINIKAY AG), 11 August 1983 (11.08.83), figures 1-4, abstract  --	9
A	US 4898089 A (ROOS), 6 February 1990 (06.02.90), figure 1, abstract  -----	1-12



# INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/SE 00/00435

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	4422369	A	27/12/83	BE 883310 A	01/09/80
				CH 645710 A	15/10/84
				CH 647589 A	31/01/85
				DE 3018169 A,C	27/11/80
				DE 3050380 A	22/07/82
				FR 2456523 A,B	12/12/80
				GB 2056050 A,B	11/03/81
				GB 2112298 A,B	20/07/83
				IT 1140951 B	10/10/86
				IT 8022138 D	00/00/00
				JP 56020941 A	27/02/81
				LU 81292 A	16/12/80
				NL 8002851 A	20/11/80
				SE 8003625 A	19/11/80
				US 4471688 A	18/09/84
				ZA 8002826 A	29/07/81
-----					
DE	3644417	A1	14/07/88	NONE	
-----					
US	4252054	A	24/02/81	NONE	
-----					
DE	3203674	A1	11/08/83	NONE	
-----					
US	4898089	A	06/02/90	NONE	
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PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. **PCT/ SE 00 / 0 0 4 3 5**

International Filing Date **2000 -03- 0 6**

**The Swedish Patent Office  
PCT International Application**

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum) **Lau PCT-2847**

**Box No. I TITLE OF INVENTION**

**PLACING UNIT FOR A HUMAN BEING**

**Box No. II APPLICANT**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**Biometron AB  
Kristinebergsgatan 13  
S-593 61 VÄSTERVIK  
Sweden**

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality:  
**Sweden**

State (that is, country) of residence:  
**Sweden**

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**Tomas Blomqvist  
Box 45  
S-593 21 VÄSTERVIK  
SWEDEN**

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:  
**Sweden**

State (that is, country) of residence:  
**Sweden**

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

**KURT LAUTMANNS PATENTBYRÅ AB  
Kurt Lautmann  
Box 245  
S-691 25 KARLSKOGA  
Sweden**

Telephone No.

**0586/503 25**

Facsimile No.

**0586/551 21**

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p> <p>✓ RO/SE ✓ George Kinigalakis Väktargatan 40C S-754 22 UPPSALA Sweden</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input checked="" type="checkbox"/> applicant and inventor</p> <p><input checked="" type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p> <p>✓ RO/SE ✓ Per Hvass Önnemovägen 47 S-146 53 TULLINGE Sweden</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input checked="" type="checkbox"/> applicant and inventor</p> <p><input checked="" type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p><input type="checkbox"/> Further applicants and/or (further) inventors are indicated on another continuation sheet.</p>	

## Box No.V DESIGNATION OF STATES

03-06-2000

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

## Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates                  | <input checked="" type="checkbox"/> LR Liberia                                   |
| <input checked="" type="checkbox"/> AL Albania                               | <input checked="" type="checkbox"/> LS Lesotho                                   |
| <input checked="" type="checkbox"/> AM Armenia                               | <input checked="" type="checkbox"/> LT Lithuania                                 |
| <input checked="" type="checkbox"/> AT Austria                               | <input checked="" type="checkbox"/> LU Luxembourg                                |
| <input checked="" type="checkbox"/> AU Australia                             | <input checked="" type="checkbox"/> LV Latvia                                    |
| <input checked="" type="checkbox"/> AZ Azerbaijan                            | <input checked="" type="checkbox"/> MA Morocco                                   |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MD Republic of Moldova                       |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MG Madagascar                                |
| <input checked="" type="checkbox"/> BG Bulgaria                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil                                |  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MW Malawi                                    |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> MX Mexico                                    |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NO Norway                                    |
| <input checked="" type="checkbox"/> CR Costa Rica                            | <input checked="" type="checkbox"/> NZ New Zealand                               |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PL Poland                                    |
| <input checked="" type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> PT Portugal                                  |
| <input checked="" type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RO Romania                                   |
| <input checked="" type="checkbox"/> DK Denmark                               | <input checked="" type="checkbox"/> RU Russian Federation                        |
| <input checked="" type="checkbox"/> DM Dominica                              | <input checked="" type="checkbox"/> SD Sudan                                     |
| <input checked="" type="checkbox"/> EE Estonia                               | <input checked="" type="checkbox"/> SE Sweden                                    |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SG Singapore                                 |
| <input checked="" type="checkbox"/> FI Finland                               | <input checked="" type="checkbox"/> SI Slovenia                                  |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SK Slovakia                                  |
| <input checked="" type="checkbox"/> GD Grenada                               | <input checked="" type="checkbox"/> SL Sierra Leone                              |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> TJ Tajikistan                                |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> TM Turkmenistan                              |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TR Turkey                                    |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> TZ United Republic of Tanzania               |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IN India                                 | <input checked="" type="checkbox"/> US United States of America                  |
| <input checked="" type="checkbox"/> IS Iceland                               |  |
| <input checked="" type="checkbox"/> JP Japan                                 | <input checked="" type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> VN Viet Nam                                  |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> YU Yugoslavia                                |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> ZA South Africa                              |
|  | <input checked="" type="checkbox"/> ZW Zimbabwe                                  |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:



**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 9.03.1999 9 March, 1999	9900868-2	Sweden		
item (2)				
item (3)				

☐ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s):

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

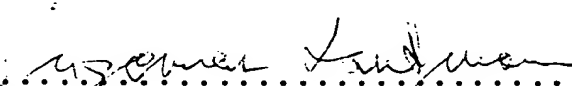
Box No. VII INTERNATIONAL SEARCHING AUTHORITY	
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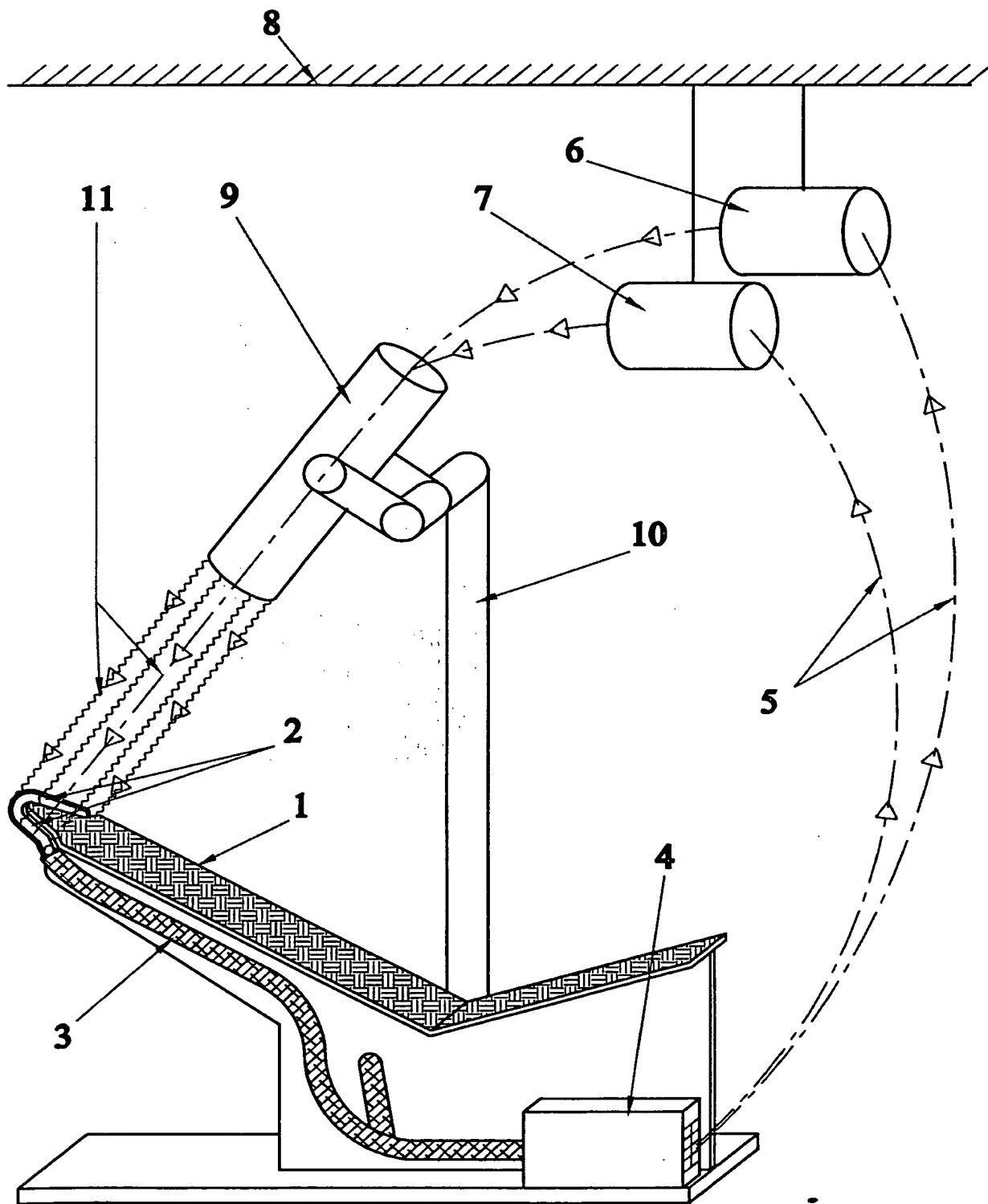
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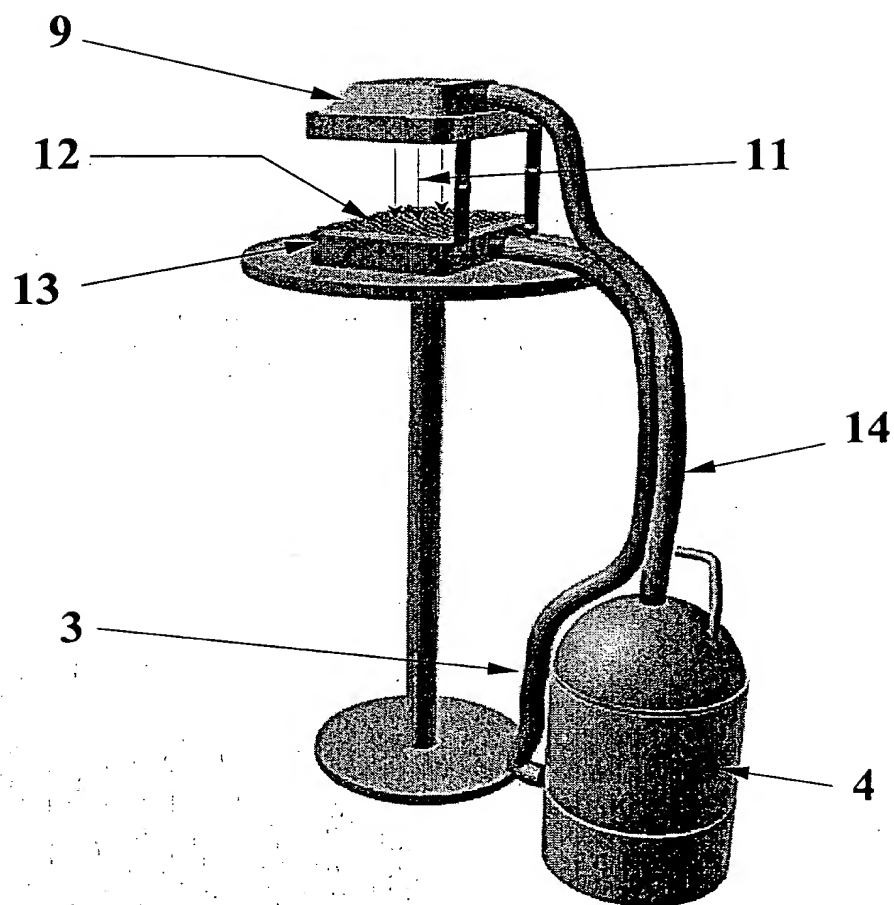
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Figur 1

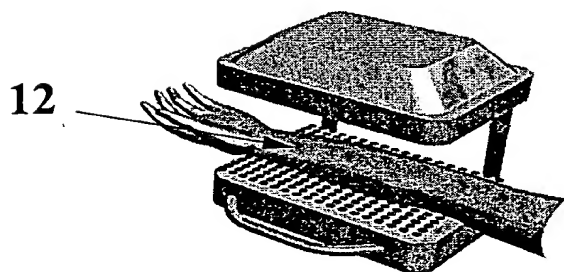


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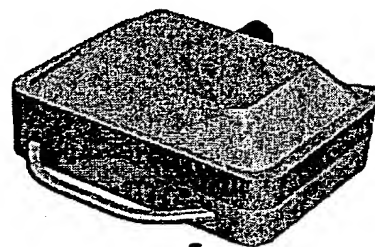
Figur 2



Figur 3

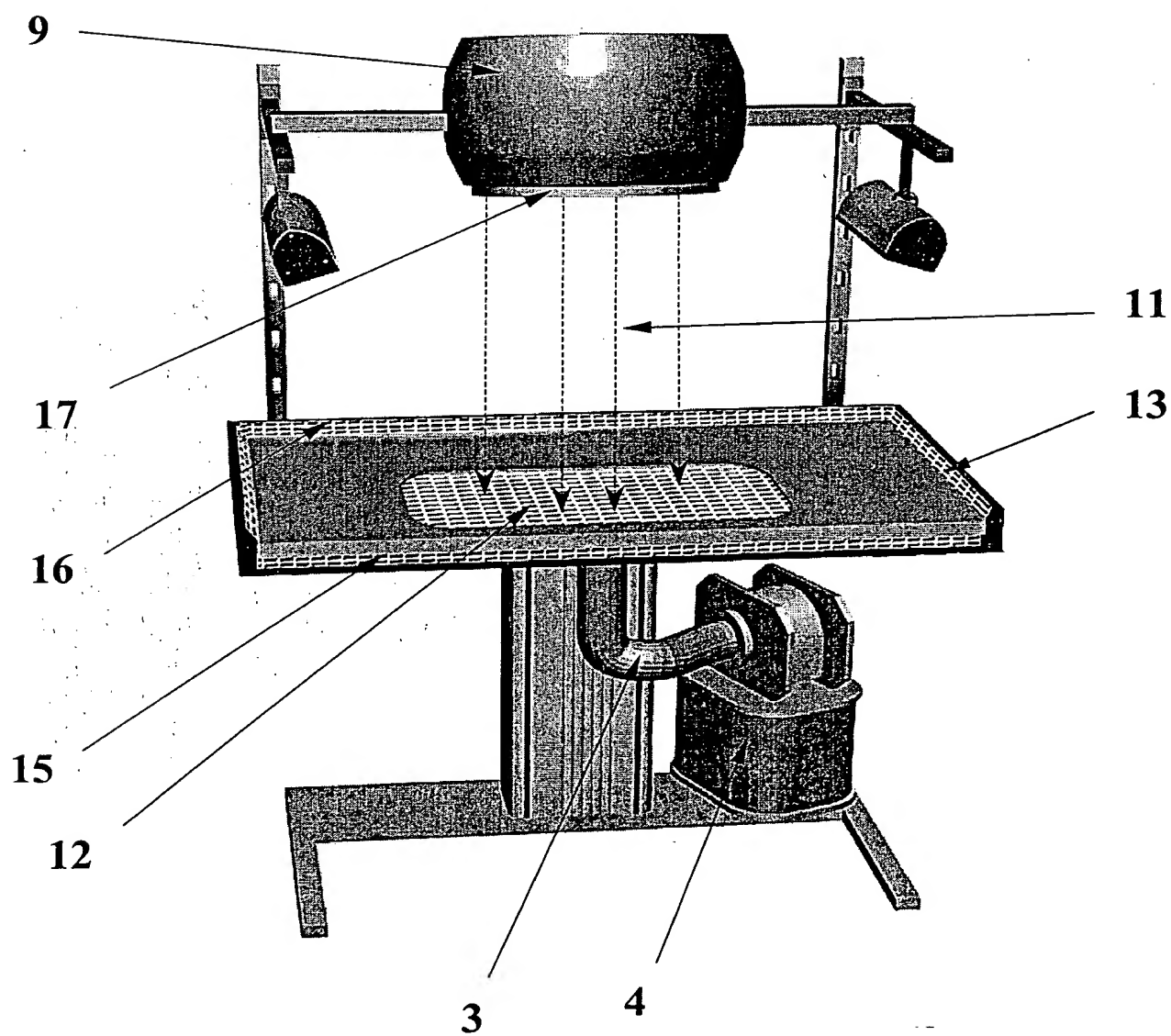


Figur 4



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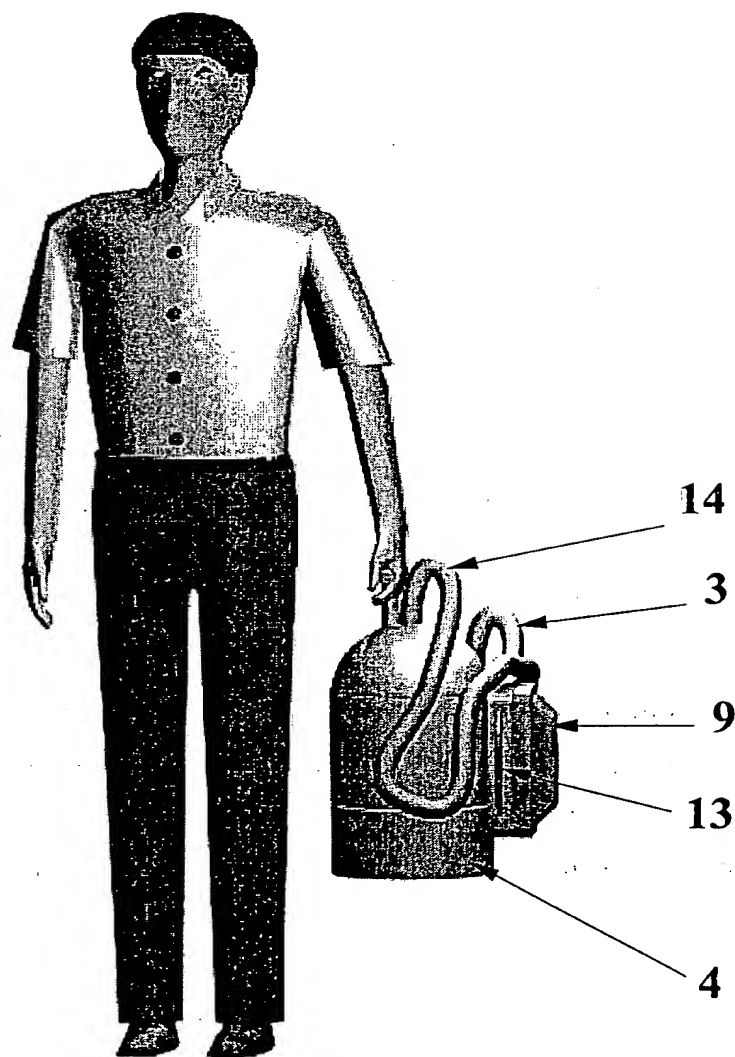
Figur 5





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Figur 6



## PLACERINGSENHET FÖR MÄNNISKA

Föreliggande uppfinning hänför sig till en placeringsenhet för människa. Dylka enheter finna speciell användning inom vård och då såväl sjukvård som tandvård.

5 Vid tandvårdsbehandling förekommer ett stort antal kemiska preparat varav flera har allergiframkallande och toxiska egenskaper. Att förebygga dessa nackdelar som medför hälsorisker finns endast att tillgå traditionell ventilationsteknik baserad på allmän ventilation och någon form av processventilation. De an-  
10 Läggningsar som finns härför är i regel ett hinder för tandvårdspersonal i trånga arbetsrytymmen och vidare orsakar de höga ljudnivåer. Uppfinningen kan även användas vid andra arbetsplatser där man, svetsar, löder eller där man använder andra ämnen som kan avge gaser och föroreningar där man är i behov av att förebygga hälsorisker

15 De luftföroreningar som förekommer är dels gasformiga, dels partikulära. Bland de gasformiga ämnen som påträffats i inomhusluft kan nämnas utöver koldioxid och vissa avgaser lättflyktiga ämnen i genomsnittlig koncentration upp till 16 mg/m<sup>3</sup>, organiska föreningar i koncentration upp till 9 mg/m<sup>3</sup>, momomerångor, acrylater, toulén, isopropanol, etanol, isobutanol, formaldehyd, kloroform,  
20 kvicksilver, kvicksilverånga, lustgas och därmed liknande. Bland de partikulära föreningarna kan nämnas amalgampartiklar, mikroskopiska kvicksilverdroppar, kompositpartiklar, pollen, mögelsporer, bakterier, virus, mikroorganismer, oorganiskt damm, stoft partiklar och därmed liknande. Vidare kan cellgifter, giftiga gaser, kemikalier och diverse andra föroreningar förekomma.

25 Föreliggande uppfinning har till uppgift att rikta en luftstråle mot placeringsenheten och då till en eller flera delar av densamma eller till hela enheten. Enheten är försedd med mottagningsöppningar som leder den riktade luftströmmen till en utsugningsutrustning som avlägsnar föroreningarna och låter  
30 renad luft strömma ut och ledas till den anordning som alstrar nämnda riktade luftström. Under sin väg till den anordning som åstadkommer riktad luftström kan

den renade luften passera en eller flera anordningar som ytterligare kan rena luften. Dessa anordningar kan ävenledes fungera som renare för luft befintlig i det behandlingsutrymme där placeringsenheten är placerad. Den anordning som alstrar den riktade luftströmmen kan vara så beskaffad att utströmmande luft är laminerad och vidare kan anordningen vara så beskaffad att den utströmmande luften kan vara pulserande. Anordningen kan även temperaturreglera den riktade luftströmmen. Föreliggande uppfinning kan även användas som ambulerande utrustning inom sjukvården samt även inom andra arbetsområden där man arbetar med ämnen som avger gaser och andra giftiga ämnen, .

Ytterligare detaljer gällande för föreliggande uppfinning framgår av efterföljande patentkrav.

Figur 1 visar en tillämpning av uppfinningen på en tandläkarstol, där Figur 2, 3 och 4 visar en ambulerande tillämpning av uppfinningen, där Figur 5 visar en tillämpning av uppfinningen på ett arbetsbord, där Figur 6 visar den ambulerande enheten vid transport.

1 är en inställbar tandläkarstol med en överdel 2 för ett huvud, överdelen innehåller mottagningsmunstycken som står i förbindelse med en slang 3 vilken är ansluten till en sugutrustning 4 som innehåller arrangemang för att bortskaffa partiklar och icke önskade gaser. Sugutrustningen kan givetvis innehålla fläkt om så erfordras. Luftströmmarna 5 ifrån suganordningen tillföres automatiskt två partikel- och gasrenare 6 och 7. Dessa gasrenare kunna ävenledes vara försedda med fläktar och dessa gasrenare är fästade i ett behandlingsrums tak 8. Den anordning som alstrar den riktade luftströmmen 11 har givits hänvisningsbeteckningen 9 och kan benämnas generator eller sändare. Anordningen 9 är fäst vid ett stativ 10 som på ett eller annat sätt är applicerad vid placeringsenheten eller vid behandlingsrummets golv. Anordning 9 kan riktas på vilket önskat sätt som helst och när det gäller en tandvårdsstol är det lämpligt att rikta anordningen 9 på sätt som visas i figuren. Det vill säga att den riktade

luftströmmen 11 träffar den behandlade människans huvud och det område där tandläkaren arbetar, så att såväl patient som tandläkare utsättes för minimal förorening. Anordningen 9 innehåller de organ som är erforderliga för att åstadkomma laminär strömning. Vidare kan anordningen vara försedd med organ som reglerar den riktade luftströmmens hastighet. Andra anordningar som kan finnas i anordningen 9 kan vara pulseringsorgan för att pulsera den riktade luftströmmen 11 och uppvärmningsorgan för att temperera den riktade luftströmmen 11.

Såsom framgår klart och tydligt av figuren 1 utsändes från anordningen 9 laminerad, riktad luftström 11 som riktas mot en patient och arbetande tandläkare. Nämda luftström 11 får därefter passera genom en suganordning 4 och från suganordningen renad luft tillföres anordningarna 6 och 7 för ytterligare rening och därefter tillföres luften anordningen 9 för att generera laminerad luftström. Den utnyttjade luften vid behandlingsstället utför således en sluten bana. Sedan torde det vara uppenbart att anordningarna 6 och 7 även låter luften i behandlingsutrymmet få passera den och åstadkomma en rening, därmed fyller enheterna 6 och 7 två uppgifter, nämligen att rena behandlingsluften och dels luften i behandlingsutrymmet. Enligt figur 2 visas en filterenhet 4, som genererar sändardonets 9 luft, som sänder en laminär luftström 11 mot det mottagardon 13, som omfattar en arbetsyta 12 som är försett med ett suggaller. Föroreningarna sugs ned i filterenheten 4 via slang 3. Hur objektet som ska behandlas kan placeras på arbetsytan 12 visas i figur 3. Det framgår av figur 4 hur sändardonet 9 och mottagardonet 13 kan placeras ihop. Som framgår av figur 5 så kan utrustningen användas vid ett större arbetsbord, där sändarenheten 9 sänder en laminär luftström 11 ner mot mottagardonet 13 som består av en arbetsyta 12 som omfattar en arbetsyta 12 som är försedd med ett suggaller, vidare är mottagardonet 13 försett med kantsug 15 och 16 runt alla kanter, dessa står i förbindelse med mottagardonet 13, som i sin tur står i förbindelse med en sugslang 3, som går från mottagardonet 13 till sugenheten 3 som är försedd med ett gas och partikelfilter. Som visas i figur 6 så kan sändardonet 9, mottagardonet 13, filterenheten 4, samt slangarna 3 och 14 sammanställas till en enhet som är

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ambulleramde. Det är viktigt att finna sambandet mellan sändnings-hastigheten på den laminära luften och mottagningshastigheten på den luft som sugs ut för att uppnå optimalt sändar-mottagarförhållande. För att uppnå bästa effekt ska luftströmmen ha full effekt till ca 50 mm över mottagar-donet, då det tar över  
5 luftströmmen. Ett riktvärde för lufthastigheten kan vara att sändar-mottagarhastigheten är densamma.

Det torde vara uppenbart att man kan använda andra anordningar av den typ som givits hänvisningsbeteckningen 9 så att man kan erhålla en riktad luftström  
10 mot ett operationsbord, mot delar av detsamma eller mot hela operationsbordet eller arbetsbordet.

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PATENTKRAV

- 5
1. Placeringsenhet (1) för människa som en patient, vilken enhet (1) kan vara en operationsenhet en tandläkarstol, en säng, ett arbetsbord och därmed liknande,  
k ä n n e t e c k n a d därav, att en anordning (9) utsätter enheten för riktad luftbestrålning (11) å viss del av enheten (1), å flera delar av enheten (1) eller å hela enheten (1) och att enheten (1) passerad luft tillföres en reningsdel (4).
- 10
2. Placeringsenhet enligt patentkrav 1,  
k ä n n e t e c k n a d därav, att ett antal anordningar (3, 4, 6 och 9) framskapar en ändlös luftström (5) i vilken den riktade luftbestrålningen (11) ingår.
- 15
3. Placeringsenhet enligt patentkrav 2,  
k ä n n e t e c k n a d därav, att en av anordningarna (9) delar upp den riktade luftbestrålningen (11) i företrädesvis separata strålar.
- 20
4. Placeringsenhet enligt patentkravet 2,  
k ä n n e t e c k n a d därav, att en eller flera av anordningarna (2, 4 och 6) innehåller absorbtionsorgan, såsom filter för föroreningar.
- 25
5. Placeringsenhet enligt patentkrav 2,  
k ä n n e t e c k n a d därav, att en eller flera av anordningarna (4, 6, 7 och 9) innehåller luftframdrivande organ, såsom fläktar.
- 30
6. Placeringsenhet enligt patentkravet 2,  
k ä n n e t e c k n a d därav, att en eller flera av anordningarna (4, 6, 7 och 9) innehåller temperaturreglerande organ.

6

7. Placeringsenhet enligt patentkravet 1,  
k ä n n e t e c k n a d därav, att den riktade luftbestrålningen (11) är  
pulserande.

- 5 8. Placeringsenhet enligt patentkravet 1,  
k ä n n e t e c k n a d därav, att anordningen kan bestå av ett sändardon (9),  
mottagardon (13) och en filterenhet (4) som är förenade med slangar (3 och  
14)

- 10 9 Placeringsenhet enligt patentkravet 8,  
K ä n n e t e c k n a d därav, att anordningen som består av sändardon (9)  
och ett mottagardon (13) kan vara ambulerande.

10. Placeringsenhet enligt patentkravet 1,  
15 k ä n n e t e c k n a d därav, att mottagardonet (13) kan vara försett med  
kantsug utefter alla kanter

11. Placeringsenhet enligt patentkravet 10,  
k ä n n e t e c k n a d därav att mottagardonet (13) kan vara försett med  
20 arbetsyta som innehåller ett suggaller.

12. Placeringsenhet enligt patentkrav 10,  
k ä n n e t e c k n a d därav att sändardonet (9) kan vara försett med lameller  
för den laminära luftströmmen och ett partikelfilter (17)

25

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## SAMMANDRAG

I en tandläkarmottagning, i ett behandlingsrum, i en lokal där man håller på med olika kemikalier eller exempelvis svetsning lödning finns en mängd föroreningar.

- 5 Enligt uppfinningen avlägsnas dessa föroreningar genom en ändlös luft-bestrålningsbana (5) som under sin strömning dels får passera ett behandlingsställe och dels ett filter.



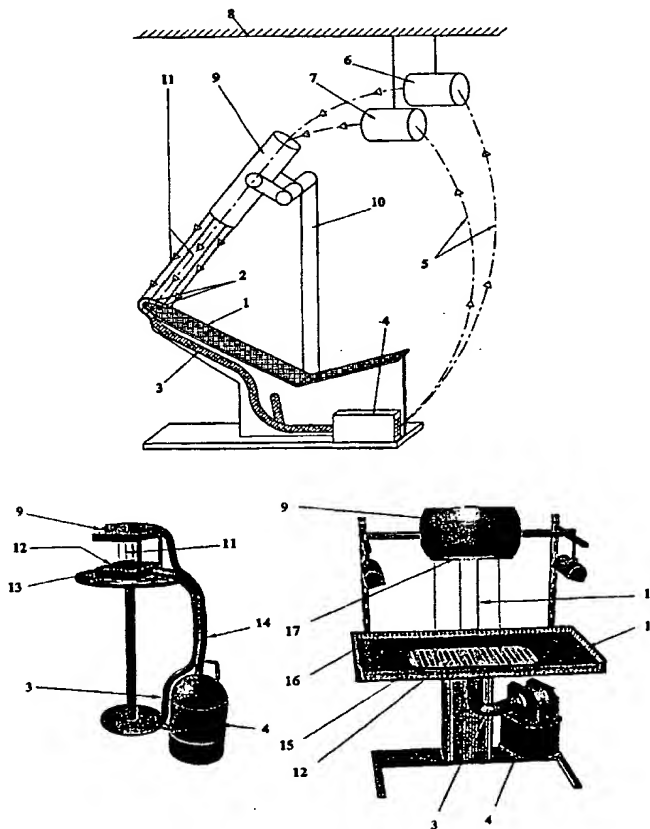
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(54) Title: PLACING UNIT FOR A HUMAN BEING

## (57) Abstract

In a dentist's surgery, a treatment room, and premises where different chemicals are handled or where welding or soldering is performed there are a number of pollutants. In accordance with the invention, these pollutants are removed by an endless air-jet circuit (5), which during its course passes a treatment locus as well as a filter.



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## PLACING UNIT FOR A HUMAN BEING

The present invention relates to a placing unit for a human being. Such units have special uses within the health-care industry, in medical care as well as dental care. In dental treatment, a large number of chemical products are used that have allergenic and toxic properties. These disadvantages, which pose health risks, can only be counteracted by traditional ventilation techniques based on general ventilation and some form of process ventilation. Existing installations for this purpose generally constitute an obstruction for the dental-care staff in cramped working spaces and further occasion high levels of noise. The invention can also be used in other work places where welding or soldering is performed or where other substances capable of emitting gases and pollutants are used and where there is a need to counteract health risks.

Air pollutants are encountered partly in the form of gases and partly in the form of particles. Among the gaseous substances that are found in indoor air, apart from carbon dioxide and certain exhaust fumes, volatile substances in an average concentration of up to 16 mg/m<sup>3</sup>, organic compounds in concentrations of up to 9 mg/m<sup>3</sup>, monomer vapours, acrylates, toluene, isopropanol, ethanol, isobutanol, formaldehyde, chloroform, mercury, mercury vapour, nitrous oxide and the like can be mentioned. Among the particle pollutants, particles of amalgam, microscopic mercury drops, composite particles, pollen, spores of mould, bacteria, viruses, micro-organisms, inorganic dust, particles of dirt and the like can be mentioned. Cytotoxins, toxic gases, chemicals and various other pollutants can likewise be encountered.

The present invention performs the task of directing a jet of air at the placing unit and, in particular at one or several parts of the same or at the entire unit. The unit is provided with receiving openings that guide the directed jet of air to an exhaust-suction apparatus that removes the pollutants and allows purified air to flow out and be conveyed to the device that generates said directed jet of air. On its way to the device

producing the directed jet of air, the purified air can pass one or several devices for further purification of the air. These devices can also act as purifiers for the air present in the treatment area where the placing unit is located. The device that generates the directed jet of air, can be  
5 designed such that the out-flowing air is laminar and the device can further be designed such that the out-flowing air can be pulsating. The device can also regulate the temperature of the directed air jet. In addition, the present invention can be used as movable equipment within the health-care industry, as well as in other fields of work where  
10 substances emitting gases and other toxic substances are handled.

Further particulars of the present invention appear in the appended claims.

15 Figure 1 shows an embodiment of the invention applied to a dentist's chair.

Figures 2, 3 and 4 show a movable embodiment of the invention.

20 Figure 5 shows an embodiment of the invention on a worktable.

Figure 6 shows the movable unit being transported.

The number 1 designates an adjustable dentist's chair with an upper  
25 part 2 for a head. The upper part comprises receiving nozzles communicating with a tube 3 that is connected to suction equipment 4 comprising arrangements for removing particles and undesired gases. The suction equipment can obviously comprise a fan, if so required. The  
30 airflows 5 from the suction device are automatically admitted to two particle and gas purifiers 6 and 7. These gas purifiers can similarly be provided with fans and these gas purifiers are attached to the ceiling 8 of a treatment room. The device generating the directed jet of air 11 has been allocated designation number 9 and can be termed a generator or transmitter. The device 9 is mounted on a stand 10 that in one way or

another is placed near the placing unit or on the floor of the treatment room. The device 9 can be directed in any desired way whatsoever and, in relation to a dentist's chair, it is suitable to direct the device 9 as shown in the drawing, that is to say such that the jet of air 11 impinges on the head of the person being treated and on the area where the dentist is working, so that the patient, as well as the dentist, is subjected to a minimum of pollutants. The device 9 comprises the members required to produce a laminar flow. Furthermore, the device can be provided with members that regulate the speed of the directed jet of air.

10 Other devices that can be encompassed by the device 9 are pulsation members for making the directed jet of air 11 pulsate and heating members for regulating the temperature of the directed jet of air 11.

As is clearly and explicitly shown in Figure 1, the device 9 emits a laminar jet of air 11 that is directed at a patient and a working dentist. Said jet of air 11 is thereafter caused to pass through a suction device 4 and air purified in the suction device is admitted to the devices 6 and 7 for further purification. Thereafter the air is admitted to the device 9 for generating a laminar jet of air. Thus, the air utilized at the treatment locus passes in a closed circuit. It will furthermore be obvious that the devices 6 and 7 also allow the air in the treatment area to pass through them and be purified. Thus, the units 6 and 7 fulfil two functions, namely to purify the treatment air as well as the air in the treatment area. Figure 2 shows a filter unit 4 that generates the air of the emitting means 9, which emits a laminar jet of air 11 towards the receiving means 13, comprising a work surface 12 that is provided with a suction grille. The pollutants are drawn down into the filter unit 4 via the tube 3. Figure 3 shows how the object to be treated can be placed on the work surface 12. How the emitting means 9 and the receiving means 13 can be fitted together is evident from Figure 4. As illustrated by Figure 5, the equipment can be used on a larger worktable, where the emitting unit 9 emits a laminar jet of air 11 down towards the receiving means 13, which consists of a work surface 12, comprising a work surface 12 provided with a suction grille. Furthermore, the receiving means 13 is provided along all its edges with

edge suction 15 and 16, communicating with the receiving means 13, which in turn communicates with a suction tube 3, extending from the receiving means 13 to the suction unit 3, which is provided with a gas and particle filter. As shown in Figure 6, the emitting means 9, the  
5 receiving means 13, the filter unit 4, and the tubes 3 and 14 can be assembled to form a movable unit. It is important to ascertain the correlation between the emitting speed of the laminar air and the receiving speed of the air that is admitted to attain the optimal emitting-receiving relationship. To obtain the best effect, the air jet should have  
10 full force up to approximately 50 mm above the receiving means, at which point it captures the flow of air. A target value for the air speed can be that the emitting speed and the receiving speed are the same.

It will be apparent that devices of the type indicated by designation  
15 number 9 can be used to obtain a jet of air directed at an operating table, at parts of the same or at the entire operating table or worktable.

## CLAIMS

1. A placing unit for a human being as a patient, which unit (1) can be an operating unit, a dentist's chair, a bed, a worktable and the like,  
5 c h a r a c t e r i z e d i n t h a t a device (9) subjects the unit to a jet of air (11) directed at a certain part of the unit (1), at several parts of the unit (1) or at the entire unit (1) a n d i n t h a t the air that passes the unit (1) is admitted to a purification part (4).
- 10 2. A placing unit as claimed in claim 1,  
c h a r a c t e r i z e d i n t h a t a number of devices (3, 4, 6 and 9) create an endless airflow (5), of which the directed jet of air (11) forms a part.
- 15 3. A placing unit as claimed in claim 2,  
c h a r a c t e r i z e d i n t h a t one of the devices (9) separates the directed jet of air (11) into preferably distinct jets.
4. A placing unit as claimed in claim 2,  
20 c h a r a c t e r i z e d i n t h a t absorption members, such as filters for pollutants, are contained in one or several of the devices (2, 4 and 6).
5. A placing unit as claimed in claim 2,  
25 c h a r a c t e r i z e d i n t h a t air-propulsion members, such as fans, are contained in one or several of the devices (4, 6, 7 and 9).
6. A placing unit as claimed in claim 2,  
c h a r a c t e r i z e d i n t h a t temperature-regulating  
30 members are contained in one or several of the devices 4, 6, 7 and 9).
7. A placing unit as claimed in claim 1,  
c h a r a c t e r i z e d i n t h a t the directed jet of air (11) is pulsating.

8. A placing unit as claimed in claim 1,  
c h a r a c t e r i z e d i n t h a t the device can consist of an  
emitting means (9), a receiving means (13) and a filter unit (4) that are  
5 connected by tubes (3 and 14).

9. A placing unit as claimed in claim 8,  
c h a r a c t e r i z e d i n t h a t the device consisting of an  
emitting means (9) and a receiving means (13) can be movable.  
10

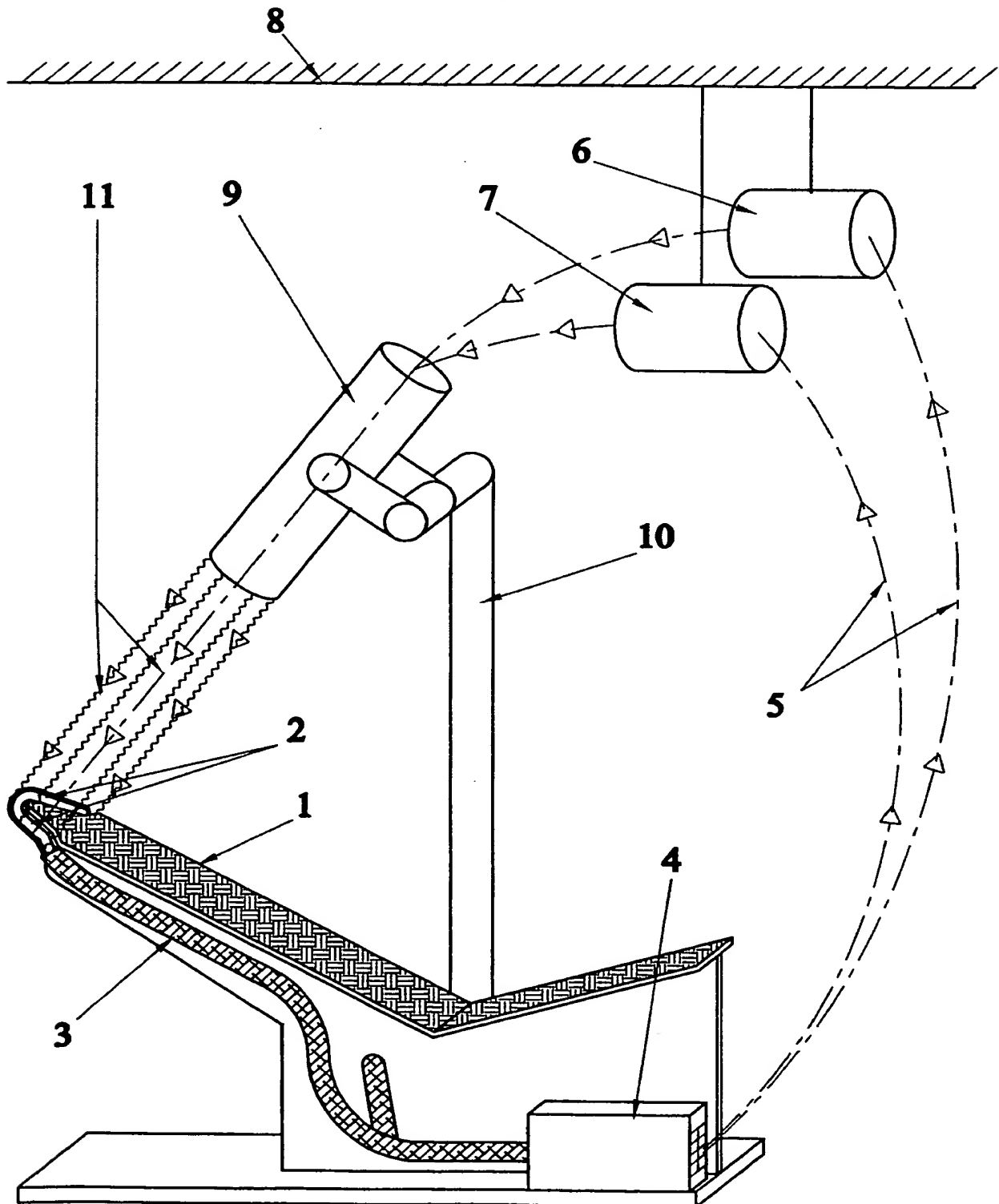
10. A placing unit as claimed in claim 1,  
c h a r a c t e r i z e d i n t h a t the receiving means (13) can  
be provided with edge suction along all edges.

15 11. A placing unit as claimed in claim 10,  
c h a r a c t e r i z e d i n t h a t the receiving means (13) can  
be provided with a work surface containing a suction grille.

12. A placing unit as claimed in claim 1,  
20 c h a r a c t e r i z e d i n t h a t the emitting means (9) can be  
provided with vanes for the laminar airflow and a particle filter (17).



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Fig. 1



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Fig. 2

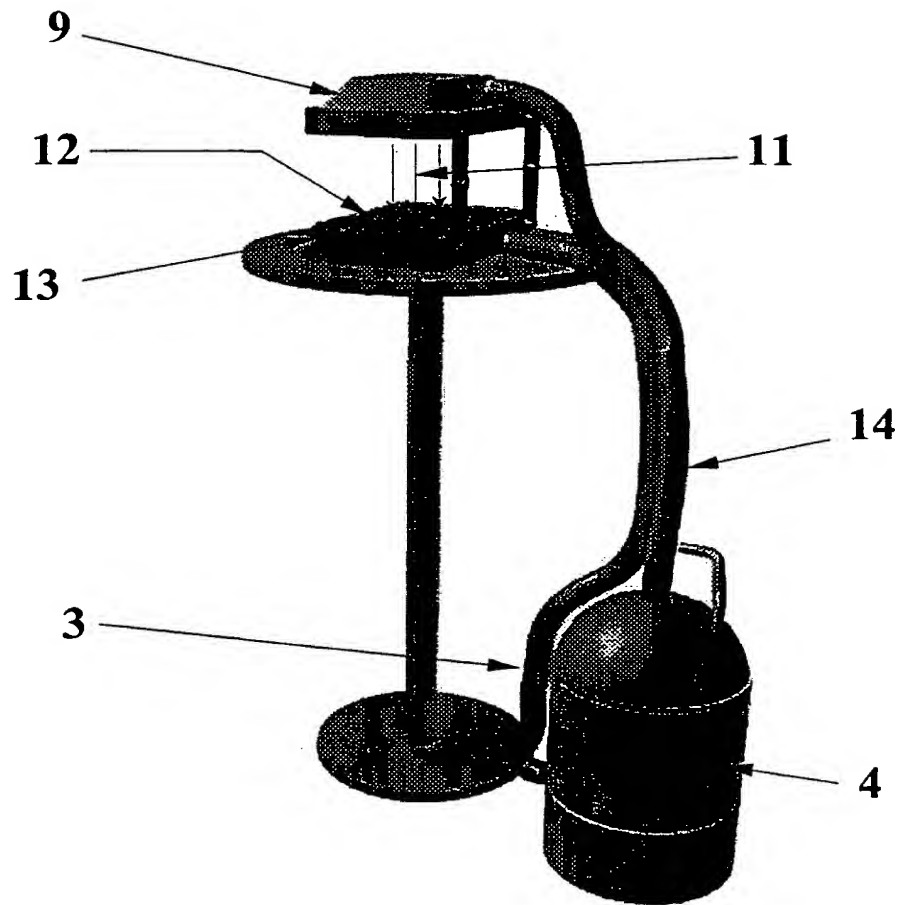


Fig. 3

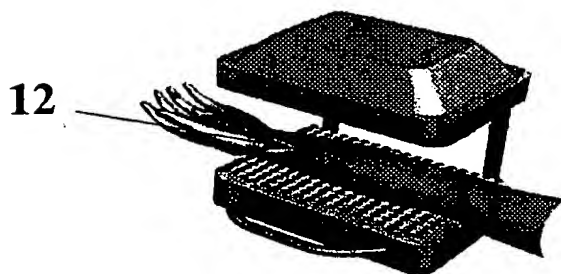
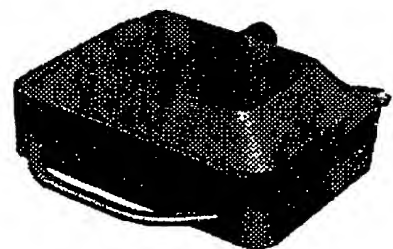
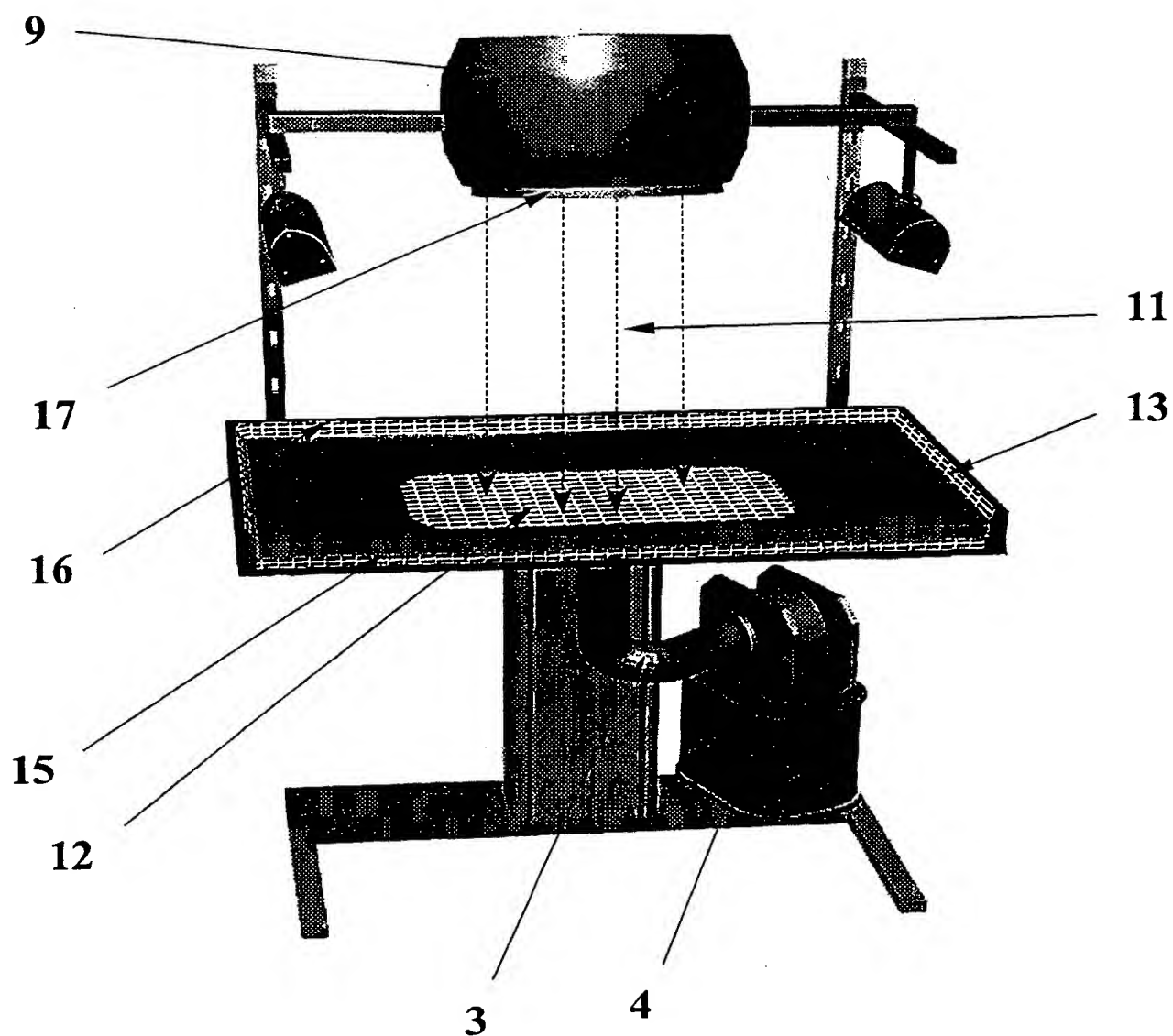


Fig. 4



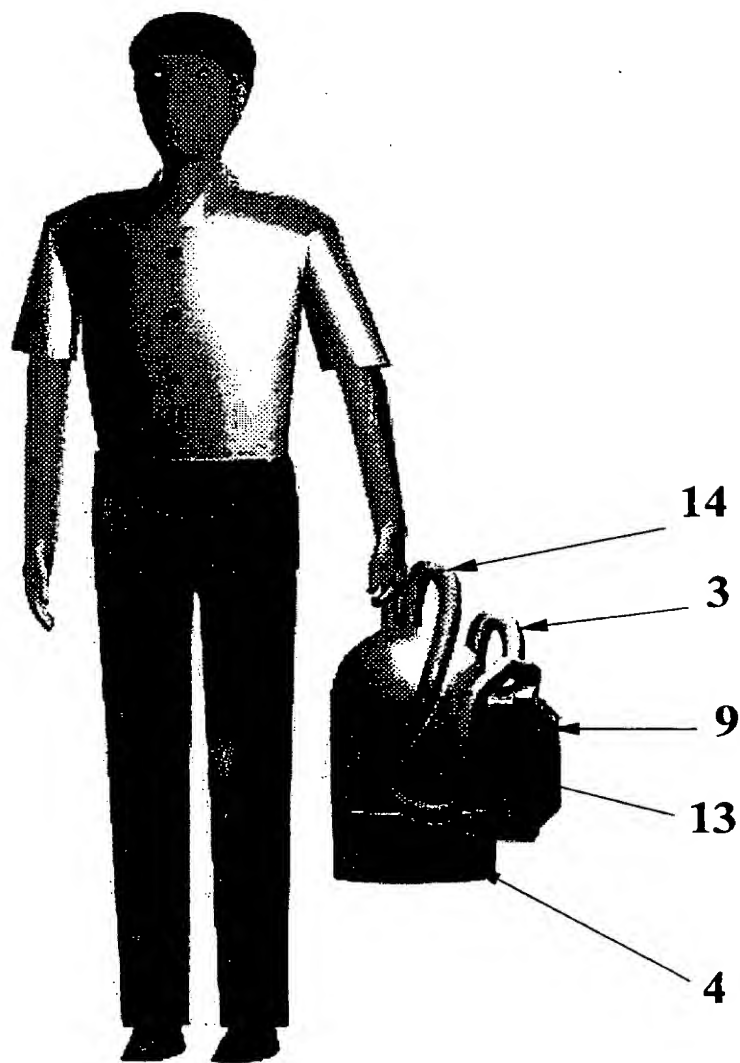
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Fig. 5



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Fig. 6



**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/SE 00/00435

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC7: A61G 10/02 // A61G 13/00, A61G 15/10, A61B 19/00  
According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A61G, A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4422369 A (SMETS), 27 December 1983 (27.12.83), column 5, line 14 - line 22, figures 1,4	1-8,10,12
Y	--	9,11
X	DE 3644417 A1 (HÖLTER, HEINZ), 14 July 1988 (14.07.88), figures 1,2, abstract	1,2,4,5,8
Y	--	3,6,7,9, 10-12
Y	US 4252054 A (BAKELS), 24 February 1981 (24.02.81), figure 2, abstract	9,11
	--	

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search

16 June 2000

Date of mailing of the international search report

2000 -07- 25

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00435

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	US 4898089 A (ROOS), 6 February 1990 (06.02.90), figure 1, abstract -- -----	1-12

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Information on patent family members

02/12/99

International application No.

PCT/SE 00/00435

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US 4898089 A	06/02/90	NONE	